What is claimed is:

1. An infrared sensor comprising:

an imaging region containing thermoelectric conversion pixels arranged two-dimensionally in the form of a matrix of a plurality of row and a plurality of columns on a semiconductor substrate to detect incident infrared rays;

a plurality of row selection lines arranged in the column direction in the imaging region;

a plurality of signal lines arranged in the row direction in said imaging region;

a plurality of amplifier transistors having respective gates connected to said signal lines and adapted to be modulated by the respective signal voltages generated in the signal lines;

a plurality of storage capacities connected respectively to the drains of the amplifier transistors and configured to store signal charges from the transistors;

a plurality of reset circuits connected to the respective drains of said amplifiers to reset the drain potentials of said amplifier transistors and make them show a predetermined potential;

a plurality of read circuits configured to read the respective signal charges stored in said storage capacities;

a plurality of coupling capacities arranged respectively between said signal lines and the gates of said amplifier transistors; and

a plurality of sampling transistors connected respectively between the drains and the gates of said amplifier transistors, said sampling transistors being selectively turned on amplifier transistors to the gates thereof.

2. An infrared sensor according to claim 1, wherein said imaging region includes at least a row of insensitive pixels having no sensitivity to infrared rays in said thermoelectric conversion pixels.

3. An infrared sensor according to claim 1, wherein said imaging region includes at least a row of insensitive pixels having no sensitivity to infrared rays in said thermoelectric conversion pixels arranged in the form of a matrix of a plurality of row and a plurality of columns and said infrared sensor further comprises:

a storage circuit configured to store a first grouped pieces of row output information obtained from said read circuits on a time series bases; and

a correction circuit configured to correct a second grouped pieces of row output information obtained as a result of selecting a row different from the row used for obtaining the first grouped pieces of row output information on the basis of the first grouped pieces of row output information stored in the storage circuit.

4. An infrared sensor according to claim 1, wherein said imaging region contains at least two rows of insensitive pixels having no sensitivity to infrared rays.

5. An infrared sensor comprising:

an imaging region containing thermoelectric conversion pixels arranged two-dimensionally in the form of a matrix of a plurality of row and a plurality of columns on a semiconductor substrate to detect incident infrared rays and at least a row of insensitive pixels having no sensitivity to infrared rays;

a plurality of row selection lines arranged in the column direction in the imaging region; a plurality of signal lines arranged in the row direction in said imaging region;

a plurality of amplifier transistors connected respectively to said signal lines with respective first coupling capacitors interposed therebetween;

a plurality of sampling transistors arranged respectively between the drains and the gates of said amplifier transistors;

a plurality of first storage capacitors connected respectively to the drains of said amplifier transistors with respective second coupling capacitors interposed therebetween;

a plurality of first reset circuits configured to reset respectively the drain potentials of said amplifier transistors;

a plurality of clamp circuits configured to clamp respectively the voltages of said first storage capacitors; and

a plurality of read circuits configured to read respectively the signal charges held in said first storage capacitors.

6. An infrared sensor comprising:

a plurality of thermoelectric conversion pixels arranged in the form of a matrix of a plurality of rows and a plurality

of columns and configured to thermoelectrically transform the heat generated as a result of absorbing incident infrared rays and take it out as a change in the resistance;

a plurality of selection lines connected respectively to either the rows or the columns of said thermoelectric conversion pixels;

a plurality of signal lines connected respectively to the other of the columns and the rows of said thermoelectric conversion pixels;

a pixel selection circuit configured to selectively apply a read voltage to said thermoelectric conversion pixels connected to said selection lines and to cause said signal lines to generate respective voltage signals;

an output signal amplifying circuit having a first input section and a second input section, said first input section being connected to said signal lines, and configured to amplify the voltage signal from said thermoelectric conversion pixels; and

a voltage generating circuit connected to the second input section of said output signal amplifying circuit and applying a waveform voltage to cancel or reduce the voltage component contained in said voltage signal, which is due to the resistance change component attributable to the self heating produced in said thermoelectric conversion pixels by said read voltage, in synchronism with said read voltage.

7. An infrared sensor according to claim 6, wherein

said output signal amplifying circuit comprises a plurality of output amplifying circuits connected respectively to said plurality of signal lines.

8. An infrared sensor comprising:

thermoelectric conversion pixels arranged two-dimensionally on a semiconductor substrate, each having an infrared absorbing section configured to absorb incident infrared rays and convert them into heat and a thermoelectric conversion section configured to convert the temperature change produced by the heat generated in the infrared absorbing section into an electric signal;

a pixel selection circuit connected to said thermoelectric conversion pixels to select one of said thermoelectric conversion pixels to be used for reading a signal from it;

a pixel signal read circuit configured to read the signal from the thermoelectric conversion pixel selected by said pixel selection circuit;

an output circuit configured to output said signal read by said pixel signal read circuit;

said pixel signal read circuit including an amplifying circuit configured to amplify the signal from said thermoelectric conversion pixel, said amplifying circuit having a MOS transistor and configured to receive the output signal of said thermoelectric conversion pixel through the gate of said MOS transistor as voltage signal; and

a voltage applying circuit configured to apply a ramp

waveform voltage or a step waveform voltage synchronized with pixel selection of said pixel selection circuit to the source of said MOS transistor to suppress the increase of a voltage between the gate and source of said MOS transistor.

9. An infrared sensor according to claim 8, wherein said voltage applying circuit comprises a voltage generator generating a ramp waveform voltage or a step waveform voltage synchronized with the pixel selection pulse from said pixel selection circuit, said voltage generator being formed on said semiconductor substrate.

10. An infrared sensor according to claim 8, wherein said voltage applying circuit comprises a voltage generator generating a ramp waveform voltage or a step waveform voltage synchronized with the pixel selection pulse from said pixel selection circuit, said voltage generator being provided outside said semiconductor substrate.

11. An infrared sensor according to claim 6, wherein each of said thermoelectric conversion pixels has a thermoelectric conversion section and a support structure for supporting the thermoelectric conversion section on a cavity structure formed inside said semiconductor substrate and the support structure includes a wire transmitting a signal from said thermoelectric conversion pixel, said wire being connected to the corresponding one of said selection lines and the corresponding one of said signal lines.

12. An infrared sensor according to claim 8, wherein

said pixel selection circuit has a pixel selection pulse output terminal and a voltage generator generating a rectangular voltage in synchronism with the pulse output, said voltage generator being provided outside the semiconductor substrate;

the rectangular voltage output from the voltage generator being input to said source;

an integration circuit having at least an electric capacitor being added to the current path between the output terminal of said voltage generator and said source.

13. An infrared sensor according to claim 12, wherein said pixel selection circuit has a plurality of voltage generators are provided.

14. An infrared sensor comprising:

thermoelectric conversion pixels arranged two-dimensionally in a plurality of rows and a plurality of columns on a semiconductor substrate, each having an infrared absorbing section configured to absorb incident infrared rays and to convert them into heat, a thermoelectric conversion section configured to convert the temperature change produced by the heat generated in the infrared absorbing section into an electric signal and a support structure for supporting said infrared absorbing section and said thermoelectric conversion section on a cavity structure formed inside said semiconductor substrate, said support structure containing at least a wire transmitting a signal from said thermoelectric conversion section, said wire being connected to a corresponding row

selection line and a corresponding column signal line;

a pixel selection circuit configured to apply a pixel selection pulse to each of said row selection lines to select at least one of said thermoelectric conversion pixels;

a pixel signal read circuit configured to read the signal from said thermoelectric conversion pixel selected by the pixel selection circuit through said corresponding column signal line; and

an output circuit configured to output said signal read by said pixel signal read circuit;

said pixel signal read circuit including a MOS transistor amplifying the signal from said thermoelectric conversion pixel;

said amplifying circuit including a circuit for conducting current modulation by applying at least the signal from said thermoelectric conversion pixel to the gate of said MOS transistor as voltage signal;

each row including at least a thermally isolated insensitive pixel having no photo sensitivity to infrared rays and supported on said cavity structure by said support structure on said semiconductor substrate, said thermally isolated insensitive pixels being arranged in the form of an insensitive pixel column, a voltage referring to a voltage generated in the column signal line of said insensitive pixel column being inputted to the source of said MOS transistor.

15. An infrared sensor according to claim 14, further comprising:

at least a one step source follower circuit configured to receive a reference voltage generated from one of said thermally isolated insensitive pixels to the input thereof, the output of said source follower circuit being input to the source of said MOS transistor.

16. An infrared sensor according to claim 14, wherein each of said thermally isolated insensitive pixels comprises an infrared reflection layer formed on the surface of the infrared absorbing section of a thermoelectric conversion pixel.